

### ABSTRACT OF THE DISCLOSURE

An exposure system with group compensation. The exposure system includes a lot classification database, a compensation unit and a first exposure device. The lot classification database records a group classification of at least one lot wafer. The compensation unit obtains the group classification of the lot wafer from the lot classification database, retrieves a group compensation value according to the group classification, and compensates overlay parameters according to the group compensation value. The first exposure device performs a back-end process including overlay and exposure processes on the lot wafer using the compensated overlay parameters.